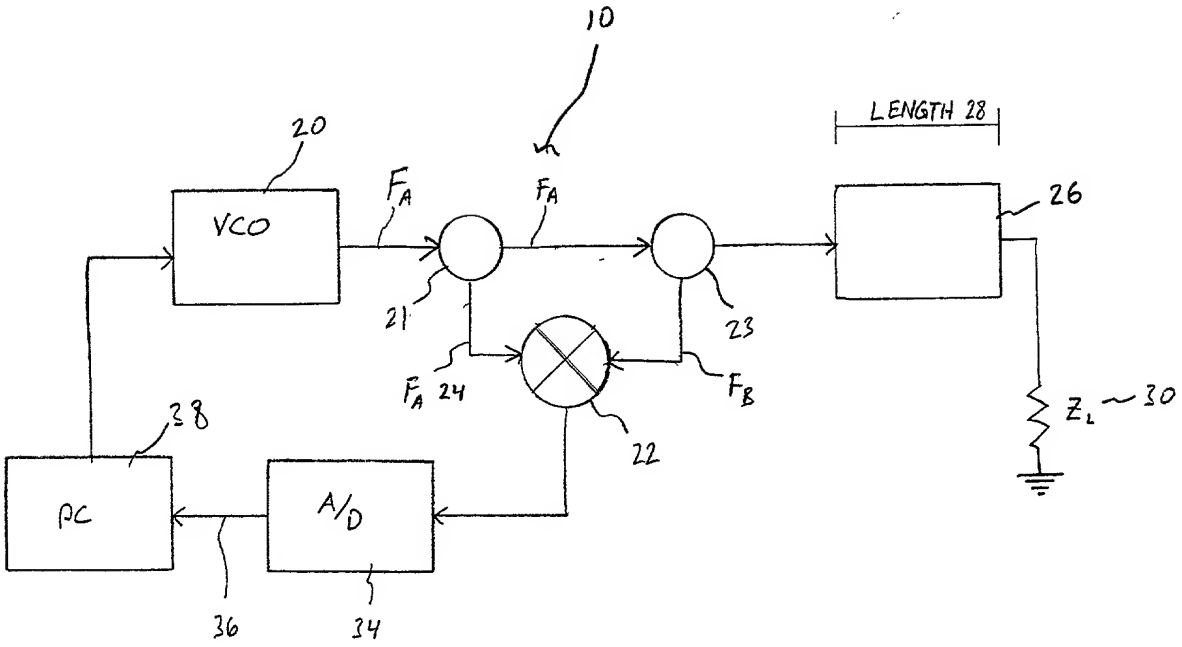

FIGURE 1

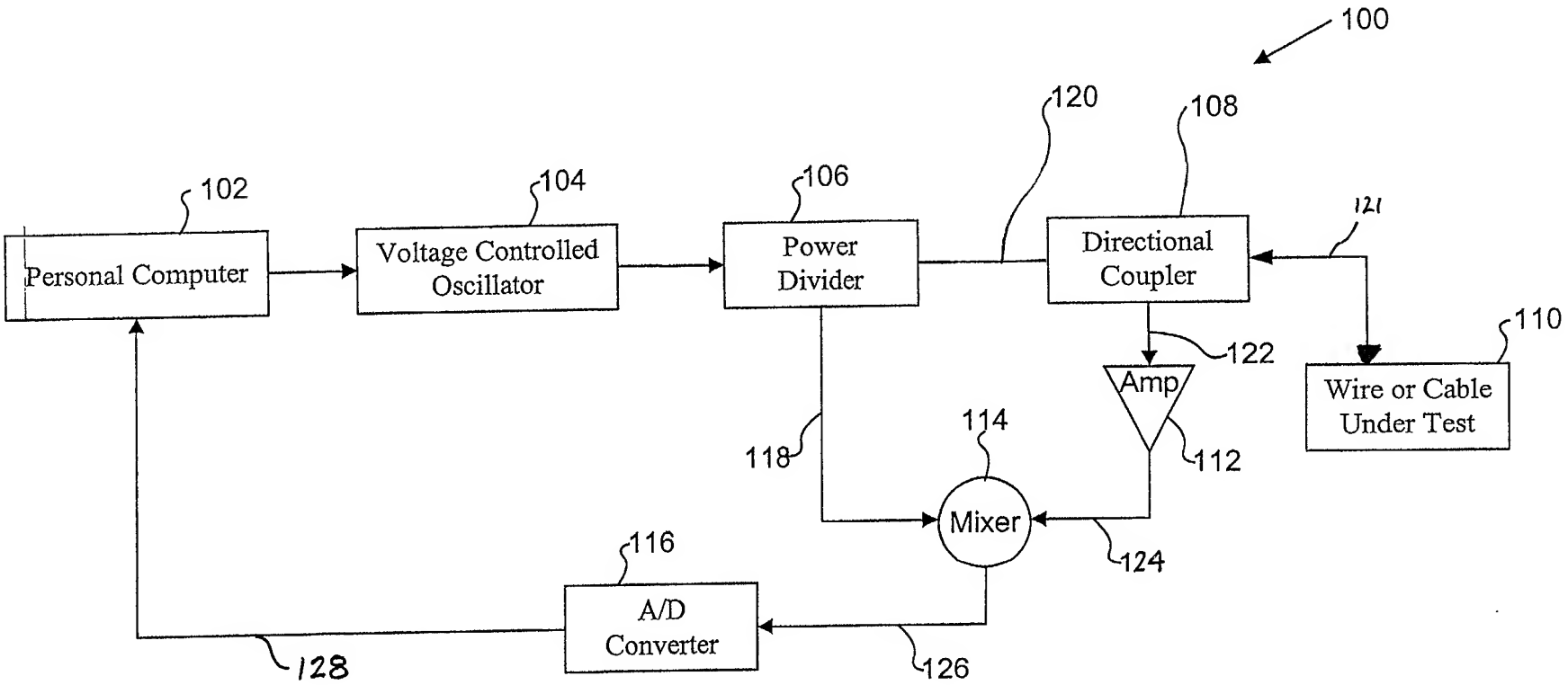
100
102
Personal Computer
104
Voltage Controlled Oscillator
106
Power Divider
120
108
Directional Coupler
121
110
Wire or Cable Under Test
122
Amp
112
114
Mixer
118
124
116
A/D Converter
126
128

FIG. 2

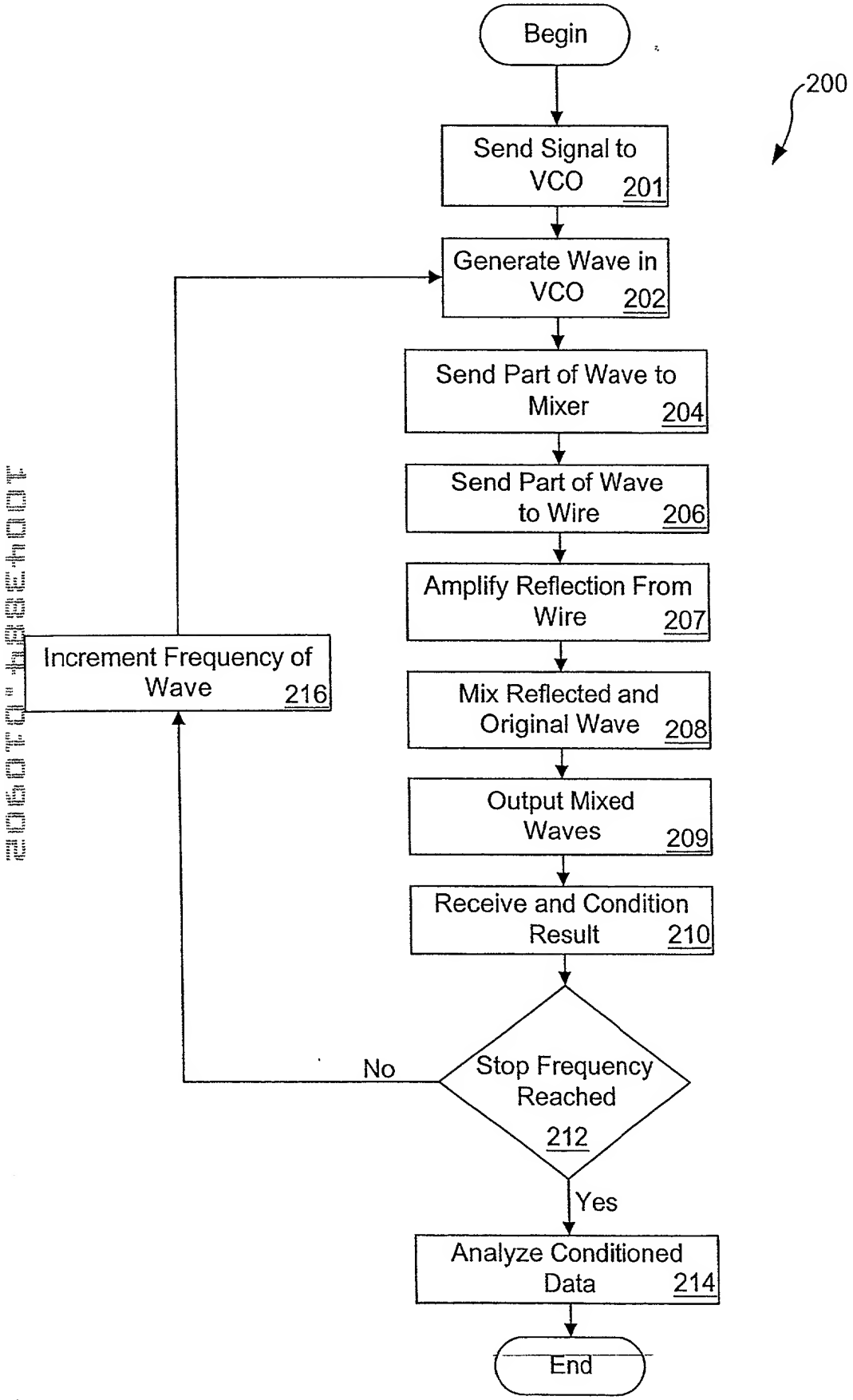
Begin
200
Send Signal to VCO 201
Generate Wave in VCO 202
Send Part of Wave to Mixer 204
Send Part of Wave to Wire 206
Amplify Reflection From Wire 207
Mix Reflected and Original Wave 208
Output Mixed Waves 209
Receive and Condition Result 210
Stop Frequency Reached 212
No
Yes
Increment Frequency of Wave 216
Analyze Conditioned Data 214
End

FIG. 3

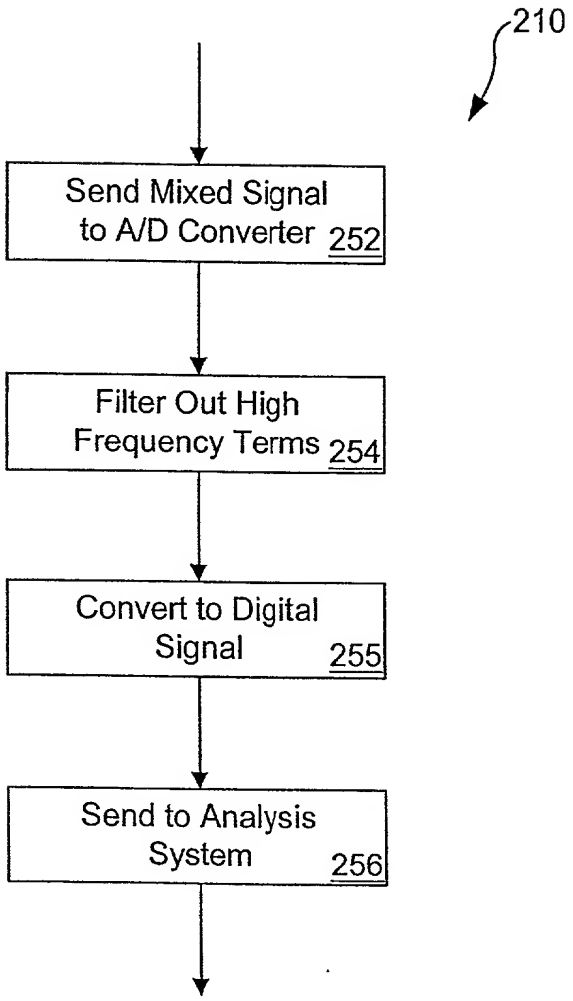
210
Send Mixed Signal to A/D Converter 252
Filter Out High Frequency Terms 254
Convert to Digital Signal 255
Send to Analysis System 256

FIG. 4

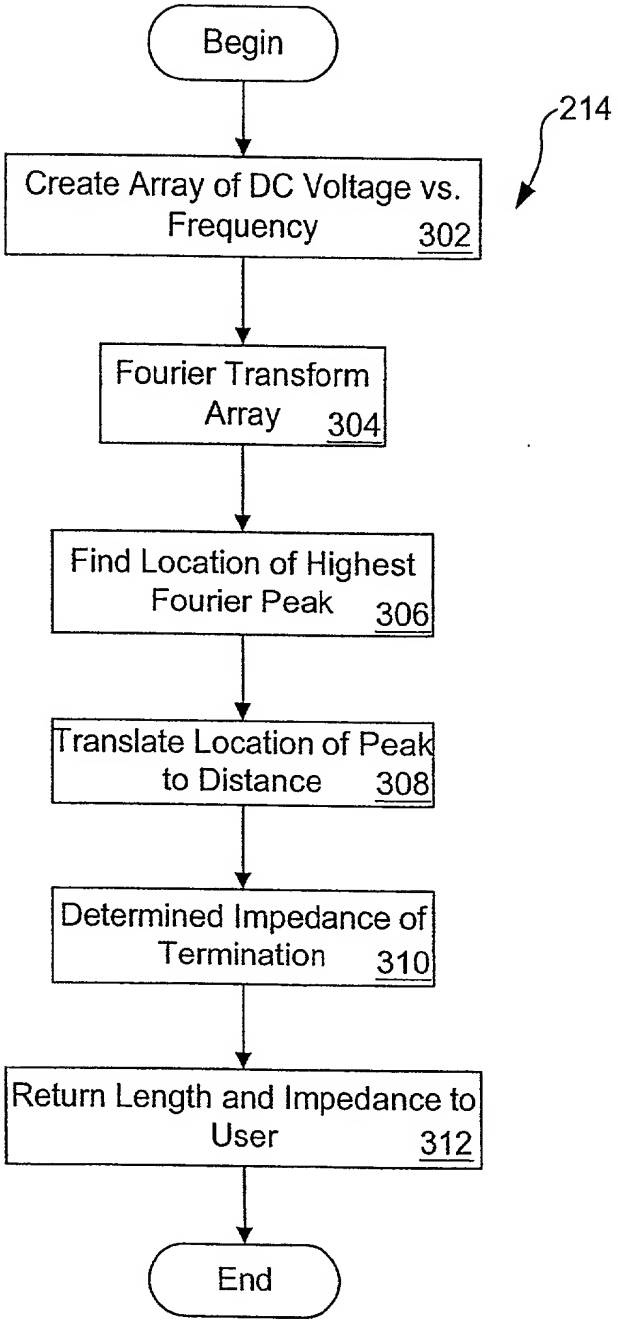
Begin
214
Create Array of DC Voltage vs. Frequency 302
Fourier Transform Array 304
Find Location of Highest Fourier Peak 306
Translate Location of Peak to Distance 308
Determined Impedance of Termination 310
Return Length and Impedance to User 312
End

FIG. 5